federal register

Wednesday
February 20, 1980

Part IV

Environmental Protection Agency

Draft Performance Specification 4—Specifications and Test Procedures for Carbon Monoxide Continuous Monitoring Systems in Stationary Sources

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[FRL 1389-2]

Standards of Performance for New Stationary Sources Continuous Monitoring Performance Specifications

AGENCY: Environmental Protection Agency (EPA).

ACTION: Advance notice of proposed rulemaking.

SUMMARY: This notice sets forth draft Performance Specification 4—Specifications and Test Procedures for Carbon Monoxide Continuous Monitoring Systems in Stationary Sources, which EPA is considering to propose as an addition to Appendix B of 40 CFR Part 60. The intent of this advance notice is to solicit comments on the specifications and testing procedures EPA is considering.

This advance notice of proposed rulemaking is issued under the authority of Sections 111, 114, and 301(a) of the Clean Air Act as amended (42 U.S.C. 7411, 7414, and 7601(a)).

DATES: Written comments and information should be post-marked on or before May 20, 1980.

ADDRESSES: *Comments.* Written comments and information should be submitted (in duplicate, if possible) to: Central Docket Section (A-130), Attention: Docket Number A-79-03, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460.

Docket. Docket Number A-79-03, containing material relevant to this rulemaking, is located in the U.S. Environmental Protection Agency Central Docket Section, Room 2903B, 401 M Street, SW., Washington, D.C. 20460. The docket may be inspected between 8:00 a.m. and 4:00 p.m. on weekdays, and a reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Don Goodwin (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711, telephone (919) 541-5271.

SUPPLEMENTARY INFORMATION: EPA promulgated standards of performance for new stationary sources pursuant to Section 111 of the Clean Air Act, as amended, on March 8, 1974 (39 FR 9308), for petroleum refineries and six other stationary sources. New or modified sources in these categories are required to demonstrate compliance with the standards of performance by means of performance tests that are conducted at the time a new source commences operation or shortly thereafter. To ensure that these sources are properly operated and maintained so as to remain in compliance, provisions were included in the standards that require sources to install and operate a continuous emission monitoring system. One such requirement was for carbon monoxide (CO) from petroleum refineries.

When the standards were initially proposed, EPA had limited knowledge about the operation of continuous monitors on such sources; thus, the continuous emission monitoring requirements were specified in general terms. Additional guidance on the selection and use of such instruments was to be provided at a later date.

On October 6, 1975 (40 FR 46259), the Environmental Protection Agency amended Part 60 of the regulations by adding Appendix B—Performance Specifications 1, 2, and 3 for continuous monitoring of (1) opacity, (2) sulfur dioxide and nitrogen oxide, and (3) oxygen or carbon dioxide, respectively. Performance specifications for CO monitors were not published at that time.

EPA has conducted short-term evaluations of the applicability of several continuous monitoring instruments and has published the results in the following documents: *Guidelines for Development of a Quality Assurance program: Volume VIII—Determination of CO Emissions from Stationary Sources by NDIR Spectrometry*, EPA-650/4-74-005-h (February 1975); and *Evaluation of Continuous Monitors for Carbon Monoxide in Stationary Sources*, EPA-600/2-77-063) March 1977). Both are available through the National Technical Information Service, Springfield, Virginia 22161.

Based on the above documents, specifications and test procedures were drafted for continuous CO monitoring instruments. the format of the draft Performance Specification 4 follows closely that of the most recent proposed revisions to Performance Specification 2 (44 FR 58602 dated Oct. 10, 1979). Several references are made in Performance Specification 4 to specific sections of the Performance Specification 2 revisions.

The Environmental Monitoring and Support Laboratory of EPA is also presently conducting a laboratory and long-term field study of CO continuous monitoring systems. Results of this study will provide essential background and technical information in support of or improvement to Performance Specification 4. The completion date is scheduled for mid-1981. For this reason, Performance Specification 4 for CO is published as an advance notice.

Specific Requests

EPA is requesting comments on the attached draft Performance Specification 4—Specifications and Test Procedures for CO Monitoring Systems in Stationary Sources. EPA is interested in comments on alternatives to the performance specifications and is particularly interested in information that could lead to the development of improved or alternative procedures. EPA is also interested in comments on the following aspects of CO continuous monitoring and Performance Specification 4: (1) Estimates of installation and operation costs including equipment costs, manpower requirements, data reduction options, and maintenance costs, (2) procedures applicable for the evaluation of single-pass, in-situ monitoring system; (3) laboratory testing procedures that are necessary for determining monitoring system performance acceptability and those laboratory tests that can be recommended as indications of the quality of equipment operation; (4) the specifications and limits set forth in Section 4; (5) the applicability of Reference Method 10 or other methods for determining relative accuracy of continuous CO monitoring systems.

Dated: February 12, 1980.

Barbara Blum,

Acting Administrator.

Performance Specification 4—Specifications and Test Procedures for Carbon Monoxide Continuous Monitoring Systems in Stationary Sources

1. Applicability and Principle

1.1 Applicability. This specification contains (a) installation requirements, (b) instrument performance and equipment specifications, and (c) test procedures and data reduction procedures for evaluating the acceptability of carbon monoxide (CO) continuous monitoring systems. The test procedures are not applicable to single-pass, in-situ monitoring systems; these systems will be evaluated on a case-by-case basis upon application to the Administrator, and alternative procedures will be issued separately.

1.2 Principle. A CO continuous monitoring system that is expected to meet this specification is installed, calibrated, and operated for a specified length of time. During the specified time period, the continuous monitoring

system is evaluated to determine conformance with the specification.

2. Definitions

The definitions are the same as those listed in Section 2 of Performance Specification 2.

3. Installation Specifications

Install the continuous monitoring system at a location where the pollutant concentration measurements are representative of the total emissions from the affected facility. Use a point, points, or a path that represents the average concentration over the cross section. Both requirements can be met as follows:

3.1 Measurement Location. Select an accessible measurement location in the stack or ductwork that is at least two (2) equivalent diameters downstream from the nearest CO control device or other point at which a change in the pollutant concentration may occur and at least 0.5 equivalent diameter upstream from the exhaust. Individual subparts of the regulations may contain additional requirements.

3.2 Measurement Points or Paths. The tester may choose to use the following measurement point, points, or path without a stratification check or he may choose to conduct the stratification check procedure given in Section 3.3 of Performance Specification 2 to select the point, points, or path of average gas concentration.

3.2.1 CO Path Monitoring Systems. Same as in Performance Specification 2, Section 3.2.2.

3.2.3 Single-Point and Limited-Path Monitoring Systems. Same as in Performance Specification 2, Section 3.2.3.

4. Performance and Equipment Specifications

The continuous monitoring system performance and equipment specifications are listed in Table 4–1. To be considered acceptable, the continuous monitoring system must demonstrate compliance with these specifications using the test procedures of Section 6.

5. Apparatus

5.1 Continuous Monitoring System. Use any continuous monitoring system for CO, which is expected to meet the specifications in Table 4–1. The data recorder may be an analog strip-chart recorder or other suitable device with an input signal range compatible with the analyzer output.

Table 4–1.—*Continuous Monitoring System Performance and Equipment Specifications*

Parameter	Specification
1. Conditioning period [a]	≥ 168 hours.
2. Operational test period [a].	≥ 168 hours.
3. Calibration error [b]	≤ 5 percent of each mid-level and high-level calibration value.
4. Response time	≤ 10 minutes.
5. Zero drift, 2 hours [a]	≤ 1 percent of span value.
6. Zero drift, 24 hours [a]	≤ 2 percent of span value.
7. Calibration drift, 2 hours [a].	≤ 2 percent of span value.
8. Calibration drift, 24 hours [a].	≤ 2.5 percent of span value.
9. Relative accuracy [a]	≤ 10 percent of Mean Ref. value.
10. Calibration gas cells or filters.	Must provide a check of all analyzer internal mirrors and lenses, and all electronic circuitry including the radiation source and detector assembly, which are normally used in sampling and analysis.
11. Data recorder chart resolution.	Chart scales must be readable to within ± 0.5 percent of full-scale.

[a] During the conditioning and operational test periods, the continuous monitoring system shall not require any corrective maintenance, replacement, or adjustment other than that clearly specified as routine and required in the operation and maintenance manuals

[b] Expressed as sum of absolute mean value plus 95 percent confidence interval of a series tests divided by a reference value.

5.2 Calibration Gases. For continuous monitoring systems that allow the introduction of calibration gases to the analyzer, the calibration gases must be CO in N_2. Use three calibration gas mixtures as specified below;

5.2.1 High-Level Gas. A gas concentration that is equivalent to 80 to 90 percent of the span value.

5.2.2 Mid-Level Gas. A gas concentration that is equivalent to 45 to 55 percent of the span value.

5.2.3 Zero Gas. A gas concentration of less than 0.25 percent of the span value. Prepurified nitrogen should be used.

5.3 Calibration Gas Cells or Filters. For continuous monitoring systems which use calibration gas cells or filters, use three certified calibration gas cells or filters as specified below:

5.3.1 High-Level Gas Cell or Filter. One that produces an output equivalent to 80 to 90 percent of the span value.

5.3.2 Mid-Level Gas Cell or Filter. One that produces an output equivalent to 45 to 55 percent of the span value.

5.3.3 Zero Gas Cell or Filter. One that produces an output equivalent to zero. Alternatively, an analyser may produce a zero value check by mechanical means, such as a movable mirror.

6. Performance Specification Test Procedures

6.1 Pretest Preparation.

6.1.1 Calibration Gas Analyses. Use calibration gas prepared according to the protocol defined in Reference 10.2.

6.1.2 Calibration Gas Cell or Filter Certification. Obtain from the manufacturer a statement certifying that the calibration gas cells or filters (zero, mid-level, and high-level) will produce the stated instrument response for the continuous monitoring system, and a description delineating the test procedure and equipment used to calibrate the cells or filters. At a minimum, the manufacturer must have calibrated the gas cells or filters against a simulated source of known concentration.

6.2 Continuous Monitoring System Preparation.

6.2.1 Installation. Install the continuous monitoring system according to the measurement location procedures outlined in Section 3 of this specification. Prepare the system for operation according to the manufacturer's written instructions.

6.2.2 Conditioning Period. Follow the procedure in Performance specification 2, Section 6.2.

6.3 Operational Test Period. Follow the procedure in Performance Specification 2, Section 6.3 and the following subsections:

6.3.1 Calibration Error Determination. Follow the procedures in Performance Specification 2, Section 6.3.1.

6.3.2 Response Time Test Procedure. Follow the procedures in Performance Specification 2, Section 6.3.2.

6.3.3 Field Test for Zero Drift and Calibration Drift. Follow the procedures in Performance specification 2, Section 6.3.3.

6.4 System Relative Accuracy. Follow the procedures in Performance Specification 2, Section 6.4 and all the accompanying subsections. The reference method is Reference Method 10.

6.5 Data Summary for Relative Accuracy Tests. Follow the procedures in Performance Specification 2, Section 6.5.

7. Equations and Reporting

Follow the procedures in Performance Specification 2, Section 7 and all the accompanying subsections.

8. Reporting

Follow the procedures in Performance Specification 2, Section 8.

9. Retest

Follow the procedures in Performance Specification 2, Section 9.

10. *Bibliography*

10.1 Repp, Mark. Evaluation of Continuous Monitors for Carbon Monoxide in Stationary Sources. U.S. Environmental Protection Agency. Research Triangle park, NC. Publication No. EPA–600/2–77–063. March 1977.

10.2 Traceability Protocol for Establishing True Concentrations of Gases Used for Calibration and Audits of Continuous Source Emission Monitors (Protocol No. 1). June 15, 1978. Environmental Monitoring and Support Laboratory, Office of Research Development, U.S. Environmental Protection Agency. Research Triangle Park, NC 27711.

10.3 Department of Commerce. Experimental Statistics. Handbook 91. Library of Congress No. 63–60072. U.S. Government Printing Office, Washington, DC.

[FR Doc. 80–5289 Filed 2–19–80; 8:45 am]

BILLING CODE 6560–01–M